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REPORT

to the

MONTANA LIVESTOCK SANITARY BOARD

December 1, 1946 to November 30, 1947

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Helena, Montana
December 1, 1947

Honorable Sam C. Ford
Governor of Montana
Helena, Montana

Sir:

In compliance with Section 3292 Political Codes of Montana 1935, we transmit herewith the report of the State Veterinary Surgeon to the Montana Livestock Sanitary Board for the year December 1, 1946 to November 30, 1947.

Respectfully submitted,

MONTANA LIVESTOCK SANITARY BOARD

W. J. Butler

W. J. BUTLER, Executive Officer

MONTANA LIVESTOCK SANITARY BOARD

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W. J. Butler

Secretary and Executive Officer
State Veterinary Surgeon
Director of Laboratories

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REPORT TO

MONTANA LIVESTOCK SANITARY BOARD

Helena, Montana
December 1, 1947

Honorable Livestock Sanitary Board
Helena, Montana

Sirs:

In compliance with Section 3292 Political Codes of Montana 1935, we submit the report of the State Veterinary Surgeon and Executive Officer of the Montana Livestock Sanitary Board for the year December 1, 1946 to November 30, 1947.

There were six meetings of the Livestock Sanitary Board held during the year 1947.

The first meeting was held at Helena on December 14, 1946.

The second meeting was held at Billings on January 16, 1947.

The third meeting was held at Helena on March 10, 1947.

The annual meeting was held at Helena on April 10 and 11, 1947.

The fifth meeting was held at Butte on May 23, 1947.

The sixth meeting was held at Missoula on August 28-29 and September 2, 1947.

At these various meetings matters pertaining to the duties of the Livestock Sanitary Board and of interest to the livestock industry were discussed at length and acted upon.

All actions, regulations and orders promulgated by the Executive Officer during the interim of the various meetings, were approved.

The complete minutes of all meetings are on file in the office of the Secretary at the Livestock Building in Helena, Montana.

FOREWORD

Again we offer a prayer of thankfulness for the good and the prosperity that have been bestowed upon the livestock industry. We have indeed been fortunate in the combination of healthy vigorous animals, good prices and good grass which has made it very easy to make money in the livestock business. Would that conditions could remain that way always. It would simplify the problem of growing livestock. Unfortunately, there is a cloud on the horizon, and that is disease.

The foot-and-mouth disease situation in Mexico and the very probable necessity that will be forced upon us of shipping in meat and meat products to supply the wants of our people hangs over our heads like the sword of Damocles. As long as we have prosperity in the United States and wage earners get a good return for their work, there will be an outstanding demand for beef. At the present time, the demand for meat is about 25% over the prewar demand. Census figures indicate our population has increased 8% in the last seven years and that it will increase another 2% by 1950 and still another 6% by 1960. There are now in the neighborhood of 144 million people in the United States. The United States Department of Agriculture reports that if we are to meet the peoples' wants and needs, we will have to increase our meat, milk and egg production approximately 37% by 1950. By 1960 the increase must be approximately 50%. We have reduced our cattle numbers from a high of 85 million in 1945 to around 77 million at the end of 1947.

If one studies the record, I believe that he would be justified in stating that not a single Federal regulation or proposal has been made to increase the cattle population. Conservationists have thrown many stones at the livestock men. In fact, many of them would deplete our ranges and our forest reserves of livestock and turn these areas over to game and sightseers.

In restricting the profitable growing of livestock our people are cutting their own throats. If this activity continues, the food problem of our nation will indeed be an acute one before many years roll by. With our own livestock population decreasing and the needs and wants of our people for meat increasing, the next step will be to open up and ship in meat and meat products from now restricted areas where foot-and-mouth disease and other extremely dangerous diseases exist. When that occurs, then we may expect repeated outbreaks of these dangerous diseases to occur in the United States. Under conditions such as exist in the United States and under methods under which we operate and live, the industry simply cannot live and prosper with certain diseases existing or rampant in its livestock.

In the past, very little effort has been expended by stockgrowers' associations and by the nation as a whole to improve the veterinary profession. In fact, we have been very apt to simply find fault without endeavoring to improve. If the livestock industry is to prosper, this condition of affairs must be changed. Every effort should be made to improve the veterinary profession. Without an improved veterinary profession the livestock industry will be lost. We should get behind research in animal diseases. If the several states and the Federal government do not provide for advanced research for the control and eradication of animal diseases, then it will pay the livestock industry itself to provide grants in aid to provide for the establishment and maintenance of animal disease research laboratories.

It is extremely difficult to get young Montana men enrolled in veterinary colleges. Every veterinary college in the United States today is over-

crowded. There are many more applicants than can be enrolled. In fact, in some of our institutions it has been necessary to turn down approximately 75% of the applicants. This means a very careful choosing of all young men who desire to study veterinary medicine. Naturally, institutions give preference and first consideration to applicants from their own state. This leaves Montana out in the cold as we have no facilities in this state for the teaching of veterinary medicine.

FINANCES

The Montana Livestock Sanitary Board has been better financed during the past three years than it has been for many years previous. This better financial situation has indeed helped us tremendously but it came just a little too late to get added veterinary personnel located in the State. There is a very definite shortage of veterinarians in the United States and unfortunately so far as Montana is concerned, large cities and west coast areas offer a much more lucrative income to a veterinarian than the work presented to him in a state like Montana. We have not been able to interest during the past year, young veterinarians in becoming associated with the Livestock Sanitary Board corps.

There are many legislative restrictions that make it unattractive for veterinarians to become associated with a state organization. They can make more money with fewer objectionable features in private practice and in many cases with disease-control organizations in other states than they can in Montana.

We lost the services of two of our salaried veterinarians this year - one by retirement and one was appointed State Veterinarian of Oregon.

We lost the services of one resident deputy who entered practice in the State of Washington. We have had great difficulty in holding our veterinarians. Several of them have been offered more lucrative positions in other states. This applies not only to the Livestock Sanitary Board corps, but also to the Research Laboratory corps. It is only their love for Montana and its people that has kept them in this state. It is a funny thing but it seems when once one becomes imbued with the Montana spirit it is extremely difficult for one to make up his mind to live in another state.

The veterinarians we have in Montana are especially well-qualified and well-trained in field work and we trust that as time goes on working conditions and restrictions will be changed so that we will be able to interest young veterinarians of above average qualifications in disease-control and research work in Montana.

I call your attention to somewhat similar remarks made in the 1946 annual report.

VETERINARY RESEARCH LABORATORY

In the most forcible way possible we call to the attention of the livestock industry the paramount need of research in animal diseases. The Veterinary Research Laboratory has given, and is giving, an excellent service to the livestock industry. Research is a time-consuming effort that is often discouraging. It takes veterinarians of more than average ability to be successful in animal-disease research work.

MOBILE LABORATORY

We have not used our mobile laboratory up to the limit due to our depleted forces, however, we would not be without it.

In area work, such as we hope to conduct for the control and ultimate eradication of bovine brucellosis (Bang's disease) the mobile laboratory will be extremely useful and if, unfortunately, foot-and-mouth disease is shipped in to us, the services of the mobile laboratory will become invaluable.

LITIGATION

There was no serious or important litigation before the Board during 1947.

HORSES

GLANDERS AND DOURINE

There were no cases of glanders or dourine found in horses in the State of Montana during the year 1947.

DISTEMPER

Distemper was not as prevalent in horses in 1947 as it was in 1946. As we stated in our 1946 report vaccination with an autogenous vaccine and treatment with sulfa drugs or penicillin has proved an effective treatment for distemper.

ENCEPHALOMYELITIS

There were 43 cases of encephalomyelitis reported in Montana in 1947. We are of the opinion, however, that actually more cases of this disease occurred than were reported, and that there were quite a number of mild cases.

While the condition was not serious in 1947, we believe that actually there were more cases scattered throughout the State in 1947 than there were in 1946. In previous reports we have been warned against the danger of this disease to the human family and to the fact that poultry and wild bird-life undoubtedly are the reservoir of the virus that causes encephalomyelitis.

INFECTIOUS ANEMIA

Infectious anemia in horses gained nation-wide recognition in 1947 due to the fact that quite a number of Thoroughbred horses in one of our large eastern race tracks became affected and died from this disease. To control the outbreak, strict quarantine measures were enforced and severe restrictions were placed on the shipment of horses from the infected area.

There is no known cure or definite practical measure that may be applied under range conditions for the elimination of infectious anemia. Apparently in most cases the disease is spread through the bite of blood-sucking insects.

There has never been any general outbreak of this disease in Montana and it appears there has been very little spread during the past many years, although we do find from time to time, an occasional case.

In 1947 three cases of infectious anemia, or swamp fever, were diagnosed in Montana.

PERIODIC OPHTHALMIA

As we have mentioned in past reports periodic ophthalmia is not known to exist in the State of Montana.

RABIES

We had one case of rabies in a horse in Montana during 1947. This is the first time rabies has been diagnosed in Montana since 1925.

This particular animal had been taken to Ogden, Utah, October 1, 1945 and was shipped back to Dillon in 1946. The first symptoms of trouble were noticed by the owner on December 27, 1946. As rabies had not existed in Montana for many years and was not at that time known to exist the owner did not suspect rabies.

The animal died on February 1, 1947. The veterinarian called to attend the animal suspected rabies and when the animal died forwarded the brain to this laboratory for examination. Negri bodies were demonstrated in this laboratory and at the Veterinary Research Laboratory. Animal inoculations and laboratory examination by the Pathological Division of the United States Bureau of Animal Industry, confirmed the diagnosis.

There have been no further cases of the disease reported. It is reasonable to presume, therefore, that the animal in question was bitten by a rabid dog when outside the State of Montana as rabies is reported to have existed in dogs in Weber County, Utah, which is the county to which the horse in question had been shipped.

CATTLE
TUBERCULOSIS

During the year 1947, in cooperation with the Bureau of Animal Industry, United States Department of Agriculture, 31,786 cattle were tested for tuberculosis. Out of this number 9 reacted, 7 proved to be skin lesion cases. There were no lesions observed in one of the other animals on post-mortem inspection and retest of the herd failed to disclose any further reactors so it is reasonable to presume that the reaction in this animal was not due to bovine tuberculosis infection, but to some form of sensitization by one of the other acid-fast organisms.

In the other case, a skin lesion was observed on post-mortem and a slight cervical lesion was also reported. Unfortunately, the tissues were not forwarded to the laboratory for laboratory test. We are not positive that this particular animal was affected with bovine tuberculosis but have recorded it as such. Repeated tests of the herd in question have failed to disclose any further reactors.

One, therefore, might be excused for mentioning the possibility that not one single, solitary case of bovine tuberculosis occurred in Montana during 1947. It will be recalled that our 1946 report mentioned the fact that tuberculosis had been reported on post-mortem inspection as occurring in an animal shipped from one of our larger herds. The retest of this herd in which 785 cattle were tested was made with the cooperation of the Bureau

of Animal Industry, U. S. Department of Agriculture, and not the faintest, slightest sign of a reaction was found in any one of the 785 cattle tested. We are, therefore, justified in assuming that the slight lesion found on post-mortem at one of our larger packing plants was not a true tuberculosis lesion. We know that ofttimes slight lesions of actinomycosis, and in fact several other conditions, may simulate slight lesions of tuberculosis.

It may be stated that in all instances where an animal gives a reaction to a tuberculin test that the reactor is immediately removed, the herd quarantined, and all of the remaining animals subjected to a retest. If bovine tuberculosis is disclosed, then all of the animals in the herd must give three consecutive negative tests for tuberculosis before the herd is released from quarantine.

The entire State of Montana is classified by the Bureau of Animal Industry, Department of Agriculture, and the Livestock Sanitary Board cooperating as a modified tuberculosis-free accredited area.

BRUCELLOSIS

In 1947 we blood tested 37,262 cattle for bovine brucellosis, or Bang's disease. Out of this number, 1,389 gave a positive reaction, or a percentage of 3.73 and 1,718 gave a suspicious reaction, or a percentage of 4.61.

There has never been any diversity of opinion among veterinarians in Montana about methods for the control and eradication of bovine brucellosis. We absolutely believe, and practical experience has proven, that bovine brucellosis can be eradicated in range and semi-range herds by good cowmanship alone, but that the process is hastened by blood testing where indicated, with the elimination of reactors and vaccination of replacement heifer calves. We believe thoroughly and absolutely in the value of vaccination but no disease has ever been, or probably ever will be, completely eradicated by vaccination alone.

In range and semi-range cattle, good cowmanship is the answer when associated with calfhood vaccination and in range herds, we believe better results will be obtained if the replacement heifer calves are vaccinated some time between the age of 6 and 12 months. An animal vaccinated when it is 4 months of age in many instances simply can not develop sufficient immune bodies to prevent disease, and this applies not only to Bang's disease vaccination but to blackleg or any other vaccination.

In the control of Bang's disease, it is well to remember that animals other than cattle may be infected and may be carriers. We know that horses may be carriers. Research has demonstrated that many horses affected with fistulous withers or poll evil are affected with brucellosis (Bang's disease).

Swine are very susceptible to this disease. Porcine or swine brucellosis is more virulent and dangerous to the human family than is the bovine type.

It is reported that approximately 20% of swine herds in the United States are affected with brucellosis. Fortunately for us swine brucellosis at this time does not exist in the State of Montana.

The Montana Livestock Sanitary Board, if finances and personnel permit, will provide a vaccination campaign in any disease-control area as provided for in Chapter 94, Session Laws of 1943, which in effect provides for disease-control areas when petitions properly signed and authenticated by 75% of the livestock growers of the species of animals to be tested, treated or vaccinated, and representing no less than 50% of such species in any township in any county in the State of Montana, petitions for area control.

JOHNE'S DISEASE

One case of Johne's disease was reported in a cow in 1947. You will recall there was only one case reported in 1946.

SCABIES

Sarcoptic mange was diagnosed in 21 herds of cattle during the year 1947. This was due to the distribution of cattle from one infected purebred herd. The disease was not known to exist in this herd until after a number of animals had been dispersed to other herds.

Circumstantial evidence points to the probability that this infection was brought in from Canada or possibly picked up on the show circuit. One animal in the herd that was found to be infected had been imported from Canada but several other animals in the herd which were found to be infected had been on the show circuit and might have picked up the disease from some out-of-state animal. We say "out-of-state" animal due to the fact that up until the time infection was found in this herd, sarcoptic mange, or scabies was not known to exist in Montana.

The original herd of cattle numbered 200 head. As we have stated, animals had been distributed from this herd to other purebred Shorthorn herds and a check revealed 21 herds of cattle infected. All exposed animals in the different herds, the total number of which was 868, were sprayed twice with an oil emulsion dip and all clinically affected animals were treated three times.

In the original herd, which was treated under adverse weather conditions, one bull on reinspection was found affected. The entire herd was re-treated five times with a lime and sulphur dip and the clinical case was treated six times. Reinspections up to this time of all previously infected herds have failed to disclose any indication of sarcoptic mange.

CHORIOPTIC SCABIES

Chorioptic mange was disclosed in one lot of cattle that was also infested with sarcoptic mange. This type of mange which is not of the same serious economic importance as is either sarcoptic or psoroptic mange was also found in one lot of cattle that had been on an out-of-state show circuit. All infested and exposed cattle were officially dipped in lime and sulphur. Reinspections of these herds have failed to disclose any further infection and indicate that the disease has been eradicated.

PSOROPTIC MANGE

Psoroptic mange was diagnosed in elk in western Montana. Psoroptic mange was not found to exist in cattle in Montana in 1947.

It is generally conceded that mange or scab mites are specie specific - that is, the mite that affects cattle does not affect elk or sheep and the mite that affects elk affects only animals of that species so there is little, if any, danger of the elk parasite being transmitted to cattle.

ANTHRAX

There were no cases of anthrax diagnosed in Montana during 1947.

ANAPLASMOSIS

There were no cases of anaplasmosis diagnosed in Montana during 1947.

BACILLARY ICTEROHEMOGLOBINURIA

In 1947 we vaccinated 11,214 cattle for bacillary icterohemoglobinuria.

In 1947 we diagnosed 29 cases of red-water. For a summary and outline of this disease we refer you to our previous reports.

The Livestock Sanitary Board, in conjunction with the research laboratory, is carrying on advanced research work in an endeavor to determine a more reliable method of control than is known at the present time.

As you will recall, this disease was shipped into the State in December, 1939 and diagnosed in January, 1940. In dealing with this disease, each year we become more definitely of the opinion that in some way liver flukes are responsible for or connected with activating the organism which causes this disease.

BLACK DISEASE

There have been no known cases of black disease in Montana during 1947.

LEPTOSPIROSIS

There were no cases of leptospirosis diagnosed in Montana in 1947.

MALIGNANT CATARRH

Two cases of malignant catarrh were diagnosed in Montana in 1947.

PULMONARY EMPHYSEMA
(Asthma)

Again we have to report that this peculiar phenomenon continues to increase. There has been no evidence obtained so far to indicate that the disease is of an infectious contagious nature, although it might possibly be due to a virus.

We were of the opinion some time ago that it was due to a body sensitization but we are now more of the opinion that this condition is due to cyanogenetic properties released by glucositic action following frost.

The history is always the same. This condition occurs in the fall of the year, generally after the first frost, in animals brought in from ranges or large pastures and placed on meadows--usually cut-over meadows. We observe the condition most frequently in cows that have calves at side, although rarely it may be observed in a steer or a bull.

PODODERMATITIS

This is one of the peculiar conditions that has been very, very rarely observed in years gone by. However, in the past five or six years, it has become quite prevalent not only in Montana but we believe in all the western states. Local treatment has not proved very effective but the intravenous administration of one of the sulfa drugs, preferably sulfamethazine or sulfathiazole, has given excellent results. Where the drug may not be given intravenously, it may be given by bolus or in suspension by mouth.

URINARY CALCULI

This is another condition that we rarely observe in cattle on range. Its incidence is growing throughout the western United States. We do not know what causes this urinary calculi--some say lack of vitamin A, others say a lack of sufficient water, others claim it is due to minerals in feed or water which are precipitated rather than assimilated. We are growing more of the opinion each year that the condition is due to a mineral imbalance and that this imbalance is due in a great part to the methods under which we now operate. It is quite possible that in certain areas we feed the wrong mineral supplement or concentrate. We know that in many areas we have a mineral deficiency. In Montana the mineral most usually deficient is phosphorus. In most sections, we have an abundance of calcium. If we feed a mixture of mineral salts containing an abundance of unneeded minerals in order to get phosphorus, we may be causing a mineral imbalance in the bodies of some animals. Nature has provided most animals with the ability to take care of these mineral imbalances so that excessive minerals are simply voided. However, this may not occur in all animals and in cases where excess minerals are not voided through the intestinal tract, the formation of urinary calculi may result.

This condition, like some of our other newer diseases, will require painstaking research to determine the true cause.

INFECTIOUS KERATITIS

Infectious keratitis is one of the present-day problems and further research is indicated.

PNEUMONIA IN CALVES

Pneumonia in calves in the fall of the year is very frequently observed. Under present-day operations, it appears that we move animals more than we used to, and it is quite a practice to ship animals into the State during the fall of the year from southern states.

Animals handled through stockyards or shipped a considerable distance and subjected to changed climatic conditions, changed feeding conditions and congregated in groups in stockyards, are more apt to develop the infection than are animals grown, located and weaned under normal conditions. We see pneumonia in native calves. However, usually the calves have been moved from one ranch to another or have been placed in corrals overnight, after trailing a considerable distance during possibly a warm afternoon. As is well known, many of our fall days are warm, but the nights are cold, and calves that have trotted along, gotten warm and dusty, and are placed in a corral overnight, may become chilled and their resistance lowered so that they may develop pneumonia.

The prevention is to keep animals in the open as much as possible; that is, keep them from getting overheated and tired and not to crowd them in corrals overnight. When the first symptoms appear, affected animals should be cut out of the herd and treated with one of the sulfa drugs - sulfamethazine or sulfathiazole. Proper veterinary treatment, if initiated when the disease first makes its appearance, will save a great majority of animals which have developed pneumonia.

VARIOUS DISEASES

As in the past, there were isolated cases of coccidiosis, hemorrhagic septicemia, malignant edema, blackleg and a number of minor disease conditions reported in cattle, during 1947. However there were no serious outbreaks of a dangerous disease, and there were no cases of screwworm infestation reported in Montana in 1947.

As we have stated in previous reports, Montana has been fortunate and we probably have fewer diseases in livestock than any other state in the Nation, but that may not always be true.

SHEEP

SCABIES

Sheep scabies does not exist in the State of Montana and has not existed in our native sheep for the past 30 years.

FOOT-ROT

There were no cases of foot-rot in sheep diagnosed in Montana during 1947.

LIP-AND-LEG ULCERATION

During the year 16,838 sheep were inspected for lip-and-leg ulceration, out of which 280 sheep were found to be affected.

CONTAGIOUS ECTHYMA

Contagious ecthyma occurs from time to time in our range lambs. It is not widespread but when it does make its appearance it is usually around shipping time, and if it does occur in a band of lambs to be shipped, the loss is considerable, as a clean bill of health can not be given for these lambs to be shipped interstate.

There is an excellent vaccine that prevents this condition and we do recommend its use, especially on any range or ranch where the disease has made its appearance in the past.

During 1947 there were 57 cases of contagious ecthyma out of 1100 sheep inspected for this condition.

VIBRIONIC ABORTION

There were 50 cases of vibrionic abortion reported in Montana during 1947.

BLACK DISEASE

Out of the 2,676 sheep inspected for black disease, ten were found to be affected with this condition.

ENTEROTOXEMIA

There were 17 cases of enterotoxemia found in the 10,801 sheep inspected for this condition.

The prevention of this condition can be greatly improved. As yet, the vaccine is not satisfactory; the serum treatment is costly and the immunity following the use of serum is very short-lived.

Dr. Floyd Cross and coworkers, Colorado State College, have had considerable success in preventing so-called "over-eating disease," or enterotoxemia, by the feeding of $3\frac{1}{2}$ grams of commercial-ground sulphur to each lamb, daily. This is increased to $7\frac{1}{2}$ grams during the latter feeding period.

INTESTINAL PARASITES

Intestinal parasites are one of the problems that confronts sheep growers operating in pasture and range areas. This is exceptionally true on ranges that are overgrazed or overcrowded. Parasitic conditions have been reviewed quite extensively in previous reports and mimeographed sheets sent out, in pamphlets issued by the United States Department of Agriculture, as well as pamphlets from our research laboratory.

We strongly recommend to all sheep growers that they get in touch with this department if they are ever having parasitic trouble in their sheep so that a practical method may be initiated for the control and possible eradication of the harmful parasites.

NODULAR WORMS

Oesophagostomum columbianum has never been reported or observed in sheep in Montana.

VARIOUS DISEASES

Our sheep have been remarkably free from disease during the past year. As always, there have been losses in individual bands, but during the past year there has been no epidemic in our sheep of any kind, and the loss, considering the State as a whole, has been of a minor nature.

SWINE
HOG CHOLERA

During 1947 hog cholera was found on two premises as compared with four premises in 1946.

ERYSIPELAS

In 1947 we inspected and examined 1,288 hogs for erysipelas, out of which we found 198 animals affected.

VARIOUS DISEASES

Worm infestation and various diseases were found in swine in 1946 but none of these conditions was of a serious nature.

DOGS
RABIES

Rabies, or hydrophobia in dogs, does not exist in Montana and with the exception of the one case reported in a horse this year, rabies has not been observed or reported in the State since 1925.

POULTRY

The Montana Livestock Sanitary Board and the Montana Poultry Improvement Board have noted great advancements in the poultry industry since the establishment in 1945 of the National Poultry Improvement Plan in Montana.

According to the 1947 report submitted to this department by Allen F. Beeckler, Secretary of the Montana Poultry Improvement Board, 39,759 birds were tested for pullorum disease, as compared with 14,977 in 1946. Nine hundred thirty five reactors were found, compared with 412 reactors in 1946. The percentage of reactors was 2.35% as compared with 2.75% in 1946.

This summary indicates that our hatcheries are cooperating nicely in the control of pullorum disease, and every effort is being made to guide and instruct them in their work.

Conforming with the regulations of the Montana Livestock Sanitary Board, the official Annual Pullorum Testing and Flock Selecting School was held September 8-12, 1947, at Bozeman. The Montana Livestock Sanitary Board, Montana Poultry Improvement Board, Montana State College, and the Dairy Division of the Montana Department of Agriculture all participated in arranging and conducting the school. There were 29 persons who passed the examination, and these individuals have been certified by the Montana Livestock Sanitary Board as State pullorum testing agents.

NEWCASTLE DISEASE

Newcastle disease was first positively diagnosed in Montana in December 1946, in a 5000-chick broiler plant. In the beginning the losses were comparatively slight; however, with each succeeding addition the losses seemed to increase, until a 97% mortality was recorded in one of the last three lots of 500 each.

The next outbreak was in another broiler plant with a capacity of 3600. In this plant, as in the previous one, the losses were comparatively slight in the beginning; but as time went on the losses increased to 20%, at which time the production of broilers was discontinued and the plant thoroughly cleaned and disinfected.

Subsequent to the positive diagnosis of Newcastle disease in these two broiler plants, the disease began to appear in imported chicks on various ranches in Montana. In checking on the source of infection, it was determined that all of the chicks were coming from the same hatchery. A list of Montana shipments was secured from the hatchery, and a questionnaire was sent to each poultryman whose name appeared on the list. Sixty-five questionnaires were returned. The history and symptoms reported indicated that Newcastle disease was present in 25 of the 65 flocks recorded. Mortality varied greatly in various shipments - from as low as 5% to as high as 75%.

Up to this time Newcastle disease has been positively diagnosed in eight flocks by means of the hemagglutination inhibition test conducted in the Helena laboratory. Newcastle disease also was diagnosed in six flocks by means of virus-egg inoculations conducted at the Veterinary Research Laboratory in Bozeman. One of these diagnoses involved a flock of 2500 turkeys. All of the cases positively diagnosed, with two exceptions, were traced to one hatchery.

We feel that Newcastle disease is a distinct threat to the poultry industry of Montana and of the Nation and that every effort should be put forth to prevent its further introduction into Montana and its spread to non-infected flocks. The poultry industry should work closely with the Montana Livestock Sanitary Board in this connection and report any abnormally high losses in imported chicks and any abrupt and unaccounted for cessation in egg production in laying flocks. When this information is furnished, every effort will be made to assist in establishing a definite diagnosis and in controlling and eradicating the disease.

DAIRY INSPECTION

There is a definite shortage of milk throughout the United States and particularly in Montana. This has resulted in the unfair practice of a few distributors purchasing market, or manufacturing milk, and distributing it as licensed dairy milk.

This practice has required drastic action upon the part of city and county health boards and the Livestock Sanitary Board. The matter has been called to the attention of every milk distributor in Montana and to every city and county health board and to every county attorney. The industry as a whole is cooperating with the Livestock Sanitary Board, and where evidence is secured that such a violation is taking place, the matter will be immediately referred to the county attorney; and if the evidence warrants, the milk plant

will be degraded to a market-milk basis. Market milk as designated in Montana may be used only for cooking or manufacturing purposes.

During the year 1947 there were issued 749 dairy licenses and 66 milk plant licenses.

MEAT INSPECTION

Official State meat inspection is being carried on at eight abattoirs. Federal meat inspection is maintained at four abattoirs in Montana.

We repeat the recommendation made in the annual report for 1946:

"We strongly recommend to the various municipalities and cities that they institute a system of meat inspection. It would appear that cities that do not have meat inspection become dumping grounds of undesirable meat and meat food products by reason of the fact that such products are not permitted to be shipped into or sold in areas where meat inspection is required.

Meat inspection protects public health, in fact, it may be reasonably stated that future health protection will demand meat inspection.

At a later period of time and in areas where it can be conducted properly, meat grading also should be required."

In 1947 the Livestock Sanitary Board issued 73 slaughterhouse licenses.

STALLION REGISTRATION BOARD

During the year 1947 the Livestock Sanitary Board, acting as the Stallion Registration Board, issued two purebred stallion licenses.

This lack of interest upon the part of owners to have their stallions licensed indicates very strongly the downward trend of the horse business.

MONTHLY LETTER

The practice of issuing a monthly letter is being continued. By issuing a monthly letter, we give to every veterinarian in the State of Montana, an over-all picture of the livestock disease conditions throughout the entire State. It also keeps them in touch with any regulations and livestock conditions of interest that occur outside the State.

GENERAL INSPECTION

In a report of this kind, we can only touch the high lights and report particularly on disease conditions of most interest and especially those on which there are special regulations on interstate shipment. Montana is a producing state and if we are to prosper, we must necessarily maintain our livestock in a disease-free condition so that they will be in demand for shipment into purchasing states.

We simply do not have a clerical force of sufficient number to give an individual report on every animal that we examine. From a practical standpoint such a procedure is not necessary. However, it is not to be assumed for one minute that our work is decreasing - far from it. Each year the work of this Department becomes more valuable and requires more painstaking and specialized service.

The results that may be obtained from concentrated disease-control efforts are demonstrated by the fact that a number of diseases of horses, cattle and sheep have been entirely eliminated from Montana.

Prevention is the key word of the Livestock Sanitary Board. Prevention of disease requires a constant supervision over the movement of livestock and requires many thousands of inspections each year. Prevention of disease pays big dividends. It is more economical to prevent disease than it is to cure it.

FOOT-AND-MOUTH DISEASE IN MEXICO

The foot-and-mouth disease situation in Mexico is serious. The indications are that it will not be eradicated for some considerable period of time. Possibly it may never be eradicated. As long as foot-and-mouth disease is in Mexico, it will be a constant threat to the economic structure of our livestock industry.

We appeal to every stockgrower to use the utmost cooperation in bringing livestock into Montana. The disease does not now exist in the United States but with foot-and-mouth disease prevalent in Mexico one never can tell when or where it may be introduced into the United States.

LIVESTOCK SANITARY BOARD

I express to the Livestock Sanitary Board my appreciation for the kind consideration and courtesy they have extended to me personally.

On behalf of the Livestock Sanitary Board corps, I express to the Board the appreciation of every member of the corps for the advice and consideration they have extended to their field forces.

I would be amiss in my duties if I did not call to the attention of the stockmen of Montana the valuable service that the members of the Board have given to the industry. I would also be amiss if I did not advise the stockgrowers of Montana that the Board has initiated a movement to have the United States Government establish and maintain a research laboratory on an isolated island or area for advanced research relative to foot-and-mouth disease.

BACTERIOLOGICAL AND PATHOLOGICAL LABORATORY

We call your attention to the report of Dr. E. M. Joneschild and trust that the report will be read, as it illustrates the scope of work and the value of a diagnostic laboratory.

CHEMICAL LABORATORY

Virgil A. Willson, Chemist to the Livestock Sanitary Board, is still with the armed forces.

Miss Jerree McCarty is acting chemist for the Livestock Sanitary Board and is performing chemical analyses in a most creditable manner.

HONORABLE BOARD OF EXAMINERS

Again we express to the Honorable Board of Examiners of the State of Montana our appreciation for the courtesy and consideration they have given to this department and the livestock industry of Montana.

COOPERATING AGENCIES

We express to the stockgrowers of Montana and to the Bureau of Animal Industry, United States Department of Agriculture corps, our appreciation for their valuable cooperation during the past year.

Respectfully submitted,

W. J. Butler

W. J. BUTLER
State Veterinary Surgeon and
Executive Officer

REPORT OF THE BACTERIOLOGIST & PATHOLOGIST

December 1, 1946 to November 30, 1947

During the year ending November 30, 1947, there were 43,844 specimens examined in the laboratory.

The material consisted of blood, smears, skin scrapings, exudates, feces, pus, parasites, tissues, milk and cream.

The species of animal and bird life represented by these specimens are horses, cattle, sheep, swine, dogs, cats, deer, antelope, mink, elk, rabbits, chinchilla, goats, guinea pigs, pheasants, chickens, turkeys and ducks.

Following is a classified list of diagnoses made giving the number of positive, negative and suspicious findings in each case:

		POSITIVE	NEGATIVE	SUSPICIOUS
Abortion, vibrionic	Sheep	2		
Abscesses, Corynebacterium	Antelope	3		
" "	Cattle	1		
" "	Chinchilla	2		
" "	Deer	1		
" "	Swine	1		
" mixed infection	Cattle	1		
" " "	Horses	2		
" Staphylococcus	Guinea pigs	6		
Actinomycosis	Cattle	15		
Anaplasmosis	Cattle		6	
Anthrax	Cattle		7	
"	Swine		1	
Arthritis, Staphylococcus	Chicken	1		
Aspergillosis	Chicken	1		
Bacillary icterohemoglobinuria (agglutination test)	Cattle		5	
Blackhead	Turkeys	8		
Blackleg	Cattle	6	4	
Brucella abortus, tissue	Cattle		1	
Brucellosis, agglutination test	"	1,390	34,155	1,718
" " "	Goats		124	
" " "	Horses	1	2	1
" " "	Human		1	
" " "	Swine		10	
Caseous lymphadenitis	Sheep	2		
Colibacillosis	Cattle	1		
"	Chickens	24		
Coryza	Chickens	2		
Cysts	Cattle	1		
"	Chickens	1		
Corynebacterium renale	Cattle	1		
Cholera	Swine	1	1	

		POSITIVE	NEGATIVE	SUSPICIOUS
Distemper	Horses	1		
Dysentery	Rabbit	1		
"	Sheep	1		
Enteritis	Swine	1		
Enterotoxemia	Sheep	2		
Erysipelas, agglutination test	Swine	12	6	
" tissue	Swine	7	3	
Fitness for food	Beef	2		
" " "	Cream	1		
" " "	Pork	1		
" " "	Turkey	1		
" " "	Venison	1		
Gizzard erosion	Chickens	3		
Hepatic coccidiosis	Rabbits	2		
Identification of specimens	Brown dog tick	2		
" " "	Cattle lice	2		
" " "	Grub	1		
" " "	Maggots	1		
" " "	Millepede	1		
" " "	Poisonous plants	3		
" " "	Water worms	3		
Infectious anemia, serum test	Horses	3	2	
Infectious bronchitis	Chickens	12		
Infectious disease examination	Cattle		20	
" " "	Chickens		21	
" " "	Elk		1	
" " "	Horses		1	
" " "	Mink		2	
" " "	Swine		4	
" " "	Turkeys		3	
Laryngothacheitis	Chickens	5		
Leptospirosis	Dog		1	
Leukosis	Cattle	1		
"	Cat	1		
"	Chickens	11		
Malignant edema	Cattle	4	3	
" "	Swine	1		
Mange, Chorioptic	Cattle	1		
" Psoroptic	Elk	1		
" Sarcoptic	Cattle	14	64	
" "	Coyote	1		
Navel ill	Dog	1		
Necrobacillosis	Cattle	8		
Newcastle disease (H.I. test)	Chickens	13	19	
" "	Ducks		2	
" "	Turkeys		10	
No diagnosis	Cattle		3	
" "	Chickens		20	
" "	Horses		1	
" "	Swine		2	
"	Turkeys		2	
Novyi infection	Sheep	1		
Nutritional deficiency	Pheasants	50		
Obstruction	Chickens	1		
"	Turkeys	1		
Paralysis	Chickens	1		
Parasites, fecal examination	Cats	1	4	
" " "	Cattle	9	3	

		POSITIVE	NEGATIVE	SUSPICIOUS
Parasites, fecal examination	Dogs	11	15	
" " "	Goats	1		
" " "	Horses	38	1	
" " "	Sheep	22		
Parasites, intestinal examination:				
Ascariasis	Chickens	4		
"	Swine	3		
Coccidial oocysts	Cattle	5		
" "	Chickens	49		
" "	Turkeys	2		
Teniasis	Chickens	24		
"	Ducks	1		
Pasteurellosis	Cattle	2		
Pediculosis	Chickens	6		
Peritonitis	Chickens	10		
"	Swine	1		
Perosis	Chickens	2		
Pullorum disease, agglutination test	Chickens	8	2	
" " " "	Turkeys	14	1,859	
" " bacteriological	Chickens	41		
Rabies	Cat		1	
"	Dogs		7	
"	Horses	1	1	
Tetany, calf	Cattle	1		
Trauma	Cat	1		
"	Chickens	4		
"	Geese	2		
"	Turkeys	1		
Trichomoniasis	Cattle		4	
Tuberculosis	Chickens	5		
Tumor	Cattle	2		
"	Chickens	1		
"	Pigeon	1		
Unsatisfactory specimens:				
Blood samples		4		
Bovine tissue		4		
Bovine blood smears		10		
Milk samples		9		
Poultry		10		
Vitamin A deficiency	Chickens	17		
Vitamin D deficiency	Chickens	16		
Bottles for sterility test		2		
Milk samples for bacterial count		787		
" " " B.coli determination		205	592	
" " " Br.abortus agglutinins		17	899	
" " " streptococcic determination (plate)		51	851	
" " " " "(smear)		69	236	
" " " staphyloccic "(smear)		8		
Cream samples for bacterial count		3		
" " " B.coli determination			3	
Milk for flavor test		1		
Total:		3,140	38,985	1,719

Respectfully submitted,

E. M. JONESCHILD

Bacteriologist & Pathologist

REPORT OF THE CHEMIST

SAMPLES FOR POISON ANALYSIS
Stomach contents, tissues, etc.

MATERIAL	ARSENIC	LEAD	STRYCHNINE	NEGATIVE	TOTAL
Bovine	15	10	2	35	62
Canine			7	9	16
Avian				4	4
Equine		1		4	5
Feline				3	3
Ovine	1			2	3
Porcine				4	4
Totals:	16	11	9	61	97

MISCELLANEOUS SAMPLES FOR POISON ANALYSIS

MATERIAL	ARSENIC	LEAD	STRYCHNINE	NEGATIVE	TOTAL
Milk				1	1
Grain			3	5	8
Dirt	1	1		6	8
Meat			4	2	6
Cake				1	1
Unknown	1			2	3
Dog food				1	1
Candy				1	1
Hay	5				5
Water	3			3	6
Pellets				1	1
Bismuth subgallate				1	1
Chalky substance				2	2
Mineral preparation				2	2
Tallow				1	1
Sulphur				1	1
Mash				1	1
Fence post preservative				1	1
Screenings				1	1
Totals:	10	1	7	33	51

MISCELLANEOUS EXAMINATIONS OTHER THAN POISONS

Water samples for total mineral content	18
Hay samples for nitrates	2
Ovine blood samples for inorganic phosphorus in blood serum	3
Ovine blood sample for calcium in blood serum	1
Bovine blood sample for calcium in blood serum	2
Bovine urine sample for acetone bodies	1
Total	27

MILK & CREAM SAMPLES

Milk:	For butterfat content (includes 28 unofficial samples)	831
"	Solids not fat (includes 8 unofficial samples)	810
"	Lactometer reading (includes 8 unofficial samples)	810
"	Total solids (calculated) (includes 8 unofficial samples)	810
"	Sediment test (includes 16 unofficial samples)	811
"	Phosphatase test, indicating proper pasteurization (includes 3 unofficial samples)	210
"	Phosphatase test, indicating improper pasteurization	9
Cream:	For butterfat (includes 2 unofficial samples)	9
"	Phosphatase test indicating proper pasteurization	6
Chocolate milk:	For butterfat	5
Skim milk:	For butterfat (includes 1 unofficial sample)	4
"	Solids not fat (includes 1 unofficial sample)	4
"	Lactometer reading (includes 1 unofficial sample)	4
"	Total solids (calculated) (includes 1 unofficial sample)	4
"	Sediment test (includes 1 unofficial sample)	4
*Total tests made on milk, cream, chocolate milk & skim milk		4331

*(This includes 850 individual samples submitted for chemical analysis)

SUMMARY OF SAMPLES ANALYZED

Stomach contents, tissues, etc., for poisons	97
Miscellaneous samples for poisons	51
Miscellaneous examinations	27
Milk and cream samples	850
Totals:	1,025

Respectfully submitted,

Jerree McCarty

Jerree McCarty, Chemist

INVESTIGATIONS SYNOPTICALLY ARRANGED

INCLUDING COOPERATIVE WORK WITH THE UNITED STATES BUREAU OF ANIMAL INDUSTRY

HORSES

Horses tested for brucellosis	4
Reactors	1

DOURINE

Number affected	None

GLANDERS

Number affected	None

ENCEPHALOMYELITIS

Number inspected	529
Cases	43

MISCELLANEOUS INSPECTIONS

Number inspected	2,734

SCABIES

Number inspected	None

IMPORTATION INSPECTIONS

Horses clinically inspected & mallein tested at destination	"
Horses clinically inspected at destination	"

TESTED AT PORT OF ENTRY AND INSPECTED

Mallein tested	"
Clinically inspected	117
Diseased	None

INSPECTIONS FOR INTERSTATE SHIPMENT

Mallein tested	3
Reactors	None
Clinically inspected	3,083
Total horses inspected	6,470

CATTLE
TUBERCULOSIS

Dairy cattle tested	17,257
Reactors (includes 7 skin lesion cases)	8
Percentage of reactors	.0057%
Other cattle tested	12,820
Reactors (skin lesion case)	1
Cases reported on post mortem inspection	None

ACCREDITED TUBERCULOSIS-FREE HERDS

Number tested	317
Reactors	None

RETESTS OF IMPORTED CATTLE

60-90 day retests	None

CATTLE TESTED AT PORT OF ENTRY

Total	None

CATTLE TESTED AT DESTINATION

Total	132
Reactors	None

CATTLE INSPECTED AT DESTINATION

Total	3,433

TESTS FOR INTERSTATE SHIPMENT

Tuberculin tested	1,260
Reactors	None
Total cattle tested for tuberculosis	31,786
Total reactors	9

SCABIES

Number inspected	71,642
Number affected	44

BRUCELLOSIS

Number inspected and blood tested	37,262
Positive reactors	1,389
Percentage positive reactors	3.73%
Suspicious reactors	1,718
Percentage suspicious reactors	4.61%
Number blood tested in field	6,939
Number positive reactors	363
Percentage positive reactors	.052%
Number suspicious reactors	111
Percentage suspicious reactors	.016%

MASTITIS

Number clinically inspected	1,117
Number affected	301

URINARY CALCULI

Number inspected	3,433
Number affected	56

BACILLARY ICTEROHEMOGLOBINURIA

Number inspected	481
Number affected	29
Number vaccinated	11,214

BLACKLEG

Number inspected	2,931
Number affected	100

ASTHMA

Number inspected	1,077
Number cases	56

INFECTIOUS KERATITIS

Number inspected	3,407
Number affected	230

MALIGNANT HEAD CATARRH

Number inspected	2
Number affected	2

MISCELLANEOUS CATTLE INSPECTIONS

Cattle inspected for various other diseases	378,947

CATTLE INSPECTED AT PORT OF ENTRY

Number clinically inspected	22
Diseased	None
Clinically inspected upon arrival in Montana	None

INSPECTIONS FOR INTERSTATE SHIPMENT

Number inspected	172,683
Number diseased	None

Total cattle inspected	683,376

SHEEP
SCABIES AND MISCELLANEOUS DISEASES

Number inspected	115,191
Number affected with scab	None

FOOT-ROT

Number inspected	None

CONTAGIOUS ECTHYMA

Number inspected	1,100
Number affected	57

BLACK DISEASE

Number inspected	2,676
Number cases	10

VIBRIONIC ABORTION

Number inspected	100
Number cases	50

BLACKLEG

Number inspected	None

LIP-AND-LEG ULCERATION

Number inspected	16,838
Number affected	280

ENTEROTOXEMIA

Number inspected	10,801
Number cases	17

IMPORTATION INSPECTIONS

Number inspected and quarantined	119,521
Number dipped & quarantined including 1st & 2d dippings	None
*Reinspection of imported sheep	21,527
Number inspected at Port of Entry	None

*Includes contact native sheep and one or more reinspections

INSPECTIONS FOR INTERSTATE SHIPMENT

Number inspected	601,185

Total sheep inspected in 1947	888,939

GOATS

Number inspected	6
Diseased (including 124 blood tests for brucellosis)	None

SWINE

Number inspected for various diseases including hog cholera	24,601
Number premises infected with hog cholera	2
Number inspected at Port of Entry	None
Inspected for interstate shipment	95
Inspected for erysipelas	1,288
Number diseased	198
Number swine blood tested for brucellosis (all negative)	10
Total swine inspections 1947	25,994

POULTRY

Number inspected for tuberculosis and various diseases	57,112
Number tested under supervision & tested by us for pullorum	2,341
Reactors	36
Percentage of reactors	.015%
Number tested for pullorum by testing agents	39,759
Reactors	935
Percentage of reactors	.024%

DOGS

Inspected for various diseases	2
Cases of rabies	None
Inspected for interstate shipment	1,006
Total inspected in 1947	1,008

GRAND TOTALS

Total animals inspected and tested	1,680,579
Total fowls inspected and tested	96,871
Total animals and fowls inspected in 1947	1,777,450

MILES TRAVELED BY DISTRICT DEPUTIES & MILK INSPECTOR

Auto	266,202

ESTIMATED NUMBER OF MILES TRAVELED BY RESIDENT DEPUTIES

Auto	61,905
Total miles traveled in 1947	328,107

RECAPITULATION OF IMPORTATIONS FOR 1947

STATE	HEALTH CERTIFICATES	TEST CHARTS	HORSES HC	CATTLE HC	CATTLE TEST	SHEEP	SWINE	DOGS	CATS	MISC.
Canada	86	7	419	291	63	179				10
Arizona	18		10	3818				15		
Arkansas	2			73				1		
California	79	4	7	1511	10	1032		75	1	
Colorado	51	37	36	2139	124	1	1	19	1	
Florida	1		2							
Idaho	173	1	386	9119	1	12739	17	56	4	2
Illinois	23	14	33	3	15		4	17		
Indiana	8		1				5	3		
Iowa	46	9	6	216	12		9	35		
Kansas	30	22	4	858	79			20		
Louisiana	1			49						
Michigan	5	4			4			5		
Minnesota	79	11	50		55		153	59	2	
Missouri	15	2	2	1	42		1	13		
Nebraska	87	70	32	2105	311		1753	53		
New Mexico	25	1	23	4795	1			4		1
New Jersey	1	1			2			2		
New York	1	2			14			1		
Nevada	1	1			1			1		
North Dakota	228	99	40	6230	1087	3738	388	39		
North Carolina	1							1		
Ohio	9	1			2	4	1	8		
Oklahoma	4		5	140				1		
Oregon	453	4	9	3017	4	15326		55		2
South Dakota	75	27	49	270	121	15624	1	15	1	
Tennessee	5		10					2		
Texas	153	9	71	21497	18	36861	1	20		
Utah	45	2	29	2663	21	10		17		
Washington	261	13	132	1240	28	48519	5	245	9	1
Wisconsin	32	16	2	38	130		3	27	1	
Wyoming	553	135	544	17436	508	20605	1406	34	4	
Mexico	1			575						
TOTALS	2552	492	1902	78084	2653	154638	3748	843	23	16

WITHDRAWN